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ABSTRACT

A study examined state-level policies and practices regarding competency testing of vocational education teachers. Data on the use of competency tests in determining which candidates are admitted to and graduated from vocational teacher education programs were collected from a mail survey of 740 beginning vocational teachers, and data regarding state-mandated competency testing requirements for the certification of vocational teachers across the 50 states were gathered from state directors of vocational education through the Adult Vocational and Technical Education Electronic Mail Network (ADVOCNET). The American College Test (ACT) is currently the most popular test for admission to teacher education programs, followed by the Scholastic Aptitude Test (SAT) and Pre-professional Skills Test (PPST). Although the National Teacher Exam-Core Battery (NTE) is currently being used by only 20.7 percent of the institutions, its use since the early 1980s has almost doubled. Evidently, most institutions do not require competency examinations for graduation. Of those requiring a competency test for graduation, no single test was used predominantly. Twenty-three (45 percent) of the 50 states indicated that basic skills competency testing was part of the state-mandated requirements for the certification of vocational teachers. Occupational competency testing was a certification requirement in 26 states (52 percent). It appeared that the wave of teacher competency testing is gaining support. (MN)

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TEACHER COMPETENCY TESTING IN VOCATIONAL EDUCATION

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Disquieting findings of numerous national commissions and task forces regarding a sharp decline in teacher quality have generated a general consensus on the urgent need to improve the way our teachers are recruited, prepared, certified and rewarded. Since teachers are now being regarded as the most important agents in school improvement efforts in the American quest for excellence in education, teacher quality is receiving considerable attention from politicians, policymakers and the public in general.

Kaplan (1985) observes that:

> the recruitment, performance, work habits, incentives, preparation, and quality of teachers have ignited attention and action throughout the nation. Scarcely a week passes without legislative or executive measures aimed at achieving excellence in the teaching profession, . . . 700 pieces of state legislation in 1983 and 1984. (p. 2)

The recommendations emerging from the major efforts mandated to investigate various avenues to improve teacher quality, indicate that a general consensus is forming regarding the most appropriate measures to achieve this objective. These include: (1) provision for attracting bright, talented individuals into the profession; (2) selective admission to teacher education; (3) enhancing and making teacher preparation more challenging so as to attract bright students; (4) exercising quality assurance and quality control over graduation; (5) raising exit requirements in teacher education programs; (6) raising certification requirements for beginning teachers; (7) abolishing lifelong

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teacher certification; (8) implementing mandatory competency testing for certification and recertification; and (9) implementing merit pay, career ladders and master teacher plans.

Of all the measures targeted to improve teacher quality, the teacher competency testing movement has perhaps been the most debated and most publicized. Despite the controversy surrounding teacher competency testing, it appears that it is not just a fad, but will become a major part of teacher recruitment, selection, certification, promotion and retention. This trend is evidenced by the recent Holmes Group report (1986) and the Carnegie Task Force report on teaching. Both of these reports place heavy emphasis on teacher competency testing, and call for more stringent certification requirements.

National polls have repeatedly shown that the great majority of the American public supports mandatory teacher competency testing for certification. For example, the 1986 Gallup poll of the public's attitude toward the public schools showed that "85 percent of the public favored requiring experienced teachers to pass a statewide test of basic competence in their subject areas. Three previous education polls showed across-the-board support for teacher competency testing" (Gallup & Clark, 1987, p. 27). In commenting on the wave of the teacher competency testing movement, Ishler (1985) observes that:

> competency testing of prospective teachers seems to be taking this country by storm. It is being viewed both as a quality assurance measure for the general public and as a way of demonstrating that teaching is indeed a profession since other professions already require successful completion of an examination prior to entry. (p. 27)

Teacher testing for certification is not an innovation in itself, since the practice dates back to Colonial times when written and oral examinations were administered to prospective teachers. However, it is only recently that it has gained widespread attention and acceptance. Denham (1985) comments on the factors that have generated the need for teacher competency testing noting that:

> a recent loss of confidence in universities as providers of well-educated graduates, often coupled with suspicion that university teacher training programs are neither rigorous nor effective, has led about all of the fifty states to require competency tests for the credentialing of teachers. (p. 41)

The logic underlying the teacher competency testing movement is based on the assumption that more educated teachers would be better prepared to improve the declining quality of education. In general, teacher competency testing has focused on the following domains: (1) basic skills; (2) professional knowledge; and (3) specific specialty areas.

Recent data on the status of teacher competency testing at the national level indicate that 27 states now require candidates for teacher certification to demonstrate their competency in basic skills (reading, writing, mathematics, speaking and listening) through test performance. In addition, 19 states have implemented tests in the area of professional knowledge or pedagogy, while 18 others have imposed similar requirements in specific specialty areas (Peterson, 1986).

While it has been well evidenced that almost all states have implemented or are in the process of implementing some form of mandatory basic skills competency testing for certification of

regular academic teachers, little is known regarding states' initiatives and policies on this issue related to the certification of vocational teachers. Presently, there are no universal standards governing the certification of vocational teachers. There are wide variations in vocational teacher certification requirements not only between states, but also within states, across specific specialty areas. These requirements are also different within states for degreed and non-degreed teachers. In general, states' requirements for the certification of nondegreed vocational teachers have been limited to documented evidence of basic education and a minimum amount of relevant occupational experience. On the other hand, candidates aspiring to teach in such areas as business education, industrial arts or home economics must, in general, hold college degrees and have some amount of relevant occupational experience (Miller 1982).

A recent survey of state practices related to the certification of prospective vocational teachers (Milanovich 1986) shows a national trend toward competency testing. Results also indicated that the NOCTI competency tests were currently being used in 21 states as part of the requirements for the certification of aspiring vocational teachers.

Methods and Procedures

It was one of the purposes of this study to shed some light on the patterns and practices of competency testing of vocational teachers for three primary purposes: (1) admission to teacher

education programs; (2) graduation from teacher education programs; and (3) state certification. Data regarding the first two purposes were obtained by means of the mailed surveys of 740 beginning vocational teachers and 69 colleges and universities that offered undergraduate vocational teacher education programs.

Data regarding state mandated competency testing requirements for the certification of vocational teachers across the 50 states were gathered from the state directors of vocational education (SDVEs) through the Adult Vocational and Technical Education Electronic Mail Network (ADVOCNET). The ADVOCNET is an online communications network of federal, state, and local adult, vocational, and technical education personnel. Linked via an electronic mail system provided by ITT Dialcom, members can transmit messages, documents, meeting and product announcements, or other information. The development of the ADVOCNET was sponsored by the Office of Vocational and Adult Education, U.S. Department of Education. The network is managed by the National Center for Research in Vocational Education, Columbus, Ohio. The ADVOCNET can be accessed with most receiving terminals or microcomputers connected to a telephone by a modem. With the exception of Connecticut and New Hampshire, all the SDVEs are linked to the ADVOCNET.

Three specific sets of questions were developed and used to elicit the information sought regarding competency testing of prospective vocational teachers for certification purposes. These questions were as follows:

1. Does your state require vocational teachers to take a BASIC SKILLS test for certification?
   a. If so, which test?
   b. What score is required for certification?
   c. Was it required in school year 1985-1986?

2. Does your state require vocational teachers to take a test of SPECIFIC OCCUPATIONAL SKILLS?
   a. If so, which test?
   b. What score is required for certification?
   c. Was it required in school year 1985-1986?

3. Does your state require vocational teachers to take any other test for certification? Which test? Score required? Required in 1985-1986?

The survey questions were transmitted to the SDVEs in the fall of 1986, through the ADVOCNET. Two weeks following the initial transmission of the research questions, reminders were sent to all nonrespondents. In addition, the SDVEs were also requested to acknowledge receipt of the survey questions. Finally, all non-respondents to the electronic mail followup were surveyed by telephone.

Results

Testing for Teacher Program Admission and Graduation

The findings regarding test requirements for teacher education programs admission (see table 1) show that the American College Test (ACT) was the most popular test for admission currently and in the early 1980s. This was followed by the Scholastic Aptitude Test (SAT) and the Pre-professional Skills Test (PPST). Although the National Teacher Exam-Core Battery (NTE) was used currently by only 20.7 percent of the institutions, its use relative to the early 1980s had almost doubled. The number of institutions that reported average minimum acceptable

TABLE 1

TEST REQUIREMENTS FOR ADMISSION TO PRESERVICE VOCATIONAL TEACHER EDUCATION PROGRAMS

Entry Requirement	Current Entry Requirements				Requirement for 1985 Grads			
	Usage		Average Minimum Standards		Usage		Average Minimum Standards	
	No.	%	Percentile	Points	No.	%	Percentile	Points
Scholastic Aptitude Test scores (SAT)	21 (61)	34.4	50.0 (1)	484 (5)	15 (48)	34.4	50 (1)	760 (2)
American College Test scores (ACT)	24 (59)	40.7	31.7 (6)	16 (9)	18 (49)	36.7	29.3 (6)	15.4 (7)
California Achievement Test scores (CAT)	6 (56)	10.7	70.0 (1)	--- (0)	4 (48)	8.3	50 (1)	--- (0)
Pre-professional Skills Test scores (PPST)	17 (54)	31.5	23.8 (4)	171.6 (7)	9 (45)	20.0	70 (2)	171.3 (4)
Calif. Basic Skills Test scores (C-BEST)	5 (55)	9.1	(0)	84.3 (3)	2 (47)	4.3	--- (0)	--- (0)
National Teacher Exam Programs--Core Battery scores (NTE)	12 (58)	20.7	55.0 (2)	341.8 (4)	6 (49)	12.2	--- (0)	--- (0)
State Developed Exam	6 (54)	11.1	50.0 (1)	--- (0)	3 (44)	6.8	50 (1)	--- (0)
Standardized Occupational Competency Exam scores (e.g., NOCTI)	6 (57)	10.5	70.0 (1)	--- (0)	4 (50)	8.0	70 (1)	--- (0)

NOTE: Numbers in parentheses represents the actual number of teacher educators responding to the item.

standards on these tests for admission was inadequate to draw any conclusions.

In general, these findings regarding test requirements for program admission are similar to those reported for the 18 member institutions of the University Council for Vocational Education (Anderson 1985). Seven of the 18 institutions (almost 39 percent) reported that "passing a competency test was required prior to admission to teacher education" (p. 7).

Apparently, most institutions do not require competency examinations for graduation (see table 2). Of those requiring a competency test for graduation, no single test was used predominantly. However, almost half of the institutions (49.2 percent) used some part of the National Teacher Exam (NTE). For example, 18.8 percent used the NTE professional knowledge test for graduation whereas 17.4 percent used the NTE Core Battery.

TABLE 2

COMPETENCY EXAMINATIONS REQUIRED FOR GRADUATION FROM VOCATIONAL TEACHER EDUCATION PROGRAMS

Competency Tests	Usage		Minimum Score Required
	No.	%	Mean
Graduate Record Exam (GRE)	1	1.4	850
College Outcomes Measures Project Test (Comptest)	1	1.4	---
California Basic Skills Test (C-BEST)	3	4.3	61
NTE - Core Battery	12	17.4	534
NTE - Pedagogy	1	1.4	---
NTE - Professional Knowledge	13	18.8	559
NTE - General Knowledge	8	11.6	641.5
Teacher Occupational Competency Test (TOCT)	2	2.9	70
Other(a)	7	10.1	---

(a) PPST, NTE - Area exam, ACT, State Developed Exam, University Exam, Miller Analogies.

These findings of little or no change in the type or rigor of program admission and graduation requirements are surprising in light of all the recent attention given to wide-ranging improvements and increased rigor in teacher education by a variety of prestigious state and national groups starting with the National Commission on Excellence in Education, producers of the Nation at Risk report, and including, among others, the Carnegie Task Force on Teaching as a Profession, the Holmes Group, the two major teacher unions, and the American Association of Colleges for Teacher Education.

Testing for State Certification

Following the initial transmission of the research questions through the ADVOCNET,slightly over a third (37.5 percent) of the SDVEs favorably responded to the request within the first week. A followup of nonrespondents was conducted and messages acknowledging receipt of the survey questions were obtained from all 30 nonrespondents. This followup generated data on vocational teacher competency testing from 14 (29 percent) SDVEs. Data from the remaining 16 states were obtained by telephone surveys. Therefore, data regarding the status of vocational teacher competency testing were available from all 50 of the states.

Of the 50 states surveyed, 23 (45 percent) indicated that basic skills competency testing was part of the state mandated requirements for the certification of vocational teachers. Similarly, in 26 states (52 percent), occupational competency testing was a certification requirement for vocational teachers.

In 14 (28 percent) of the states surveyed testing in both basic skills and occupational competency was required for vocational teacher certification.

Results also indicated that 6 different tests were used by states for testing the basic skills competencies of prospective vocational teachers (see table 3). The National Teacher Examination (NTE) Core Battery, and state developed tests were the most frequently used instruments.

TABLE 3

TESTS OF BASIC SKILLS USED FOR THE CERTIFICATION OF VOCATIONAL TEACHERS

Name of Test	No.	%
NTE Core Battery	8	34.78
State Developed Test	7	30.44
ETS PPST	3	13.04
California Achievement Test	3	13.04
University Developed Test	1	4.35
ACT COMP	1	4.35
Total	23	100.00

Given these findings, and the fact that most of the beginning vocational teachers in the present study were high school teachers, it is odd that so few of the teachers reported having taken competency exams for state certification. Table 4 shows that only 16.4 percent or 121 of the teachers took a basic skills

TABLE 4

TEACHER COMPETENCY EXAMINATIONS REQUIRED FOR CERTIFICATION AND EARNED SCORES

Examinations	No.	%	Scores			
			Low Quartile	2nd Quartile	3rd Quartile	High Quartile
Basic Skills Exam						
YES	121	16.4	8 (6.6)	13 (10.7)	45 (37.2)	55 (45.5)
NO	553	74.4				
No Response	66	8.9				
Occupational skills Exam						
YES	52	6.9	4 (7.7)	4 (7.7)	9 (17.3)	35 (67.3)
NO	629	85.0				
No Response	59	8.0				

competency exam and only 6.9 percent or 52 teachers reported taking an occupational skills competency exam for state certification.

Of the 26 states having implemented mandatory occupational competency testing requirements for vocational teacher certification, the majority (61.5 percent) were using the Teacher Occupational Competency Tests (TOCT). The TOCT tests are developed by the National Occupational Competency Testing Institute (NOCTI). Table 5 provides a listing of other types of tests used for the same purpose along with their frequency of use. A detailed breakdown of basic skills and occupational competency tests used for certification of vocational teachers by state is presented in table 6.

TABLE 5

TESTS OF OCCUPATIONAL SKILLS USED FOR VOCATIONAL TEACHER CERTIFICATION

Name of Test	No.	%
NOCTI	16	61.54
NTE Professional Test	6	23.08
State Developed Test	2	7.68
ETS Specialty Area Test	1	3.85
National Evaluation System	1	3.85
Total	26	100%

Although many states have implemented or are in the process of implementing basic skills competency testing for the certification of vocational teachers, the great majority are exercising some caution in using the test results for decision making purposes. This trend was evidenced from information provided by the SDVEs during one-to-one telephone surveys. Many states are collecting test data over a period of time in order to

TABLE 6

COMPARISON OF STATES USING BASIC SKILLS AND OCCUPATIONAL COMPETENCY TESTING FOR THE CERTIFICATION OF VOCATIONAL TEACHERS

	Basic Skills Testing						Occupational Skills Testing				
STATES	NTE Core Battery	State Developed Basic Skills Tests	ETS PPST	Calif. Achievement Test	University Developed Test	ACT Comp.	NOCTI	NTE Professional Test	State Developed Test	ETS Specialty Test	National Evaluation System Test
Alabama		X					X				
Alaska											
Arizona*		X									
Arkansas		X					X				
California*											
Colorado*				X			X				
Connecticut											
Delaware*			X				X				
Florida		X									
Georgia							X				
Hawaii	X							X			
Idaho											
Illinois											
Indiana*	X						X			X	
Iowa							X				
Kansas*							X				
Kentucky		X					X		X		
Louisiana	X							X			
Maine	X										
Maryland*							X				
Massachusetts*									X		
Michigan											
Minnesota											
Mississippi*				X							
Missouri*											
Montana*	X							X			
Nebraska*											
Nevada											
New Hampshire*			X								
New Jersey											
New Mexico*					X			X			
New York	X							X			
North Carolina*	X										
North Dakota											
Ohio*											
Oklahoma							X				
Oregon*				X							
Pennsylvania*		X					X				
Rhode Island							X				
South Carolina								X			
South Dakota	X						X				
Tennessee*											
Texas*		X									
Utah											
Vermont*							X				
Virginia							X				
Washington*											
West Virginia			X			X					X
Wisconsin*											
Wyoming*											
TOTAL	8	7	3	3	1	1	16	6	2	1	1

*Denotes the 24 states surveyed by the Vocational Teacher Education Study.

establish appropriate cut-off scores for aspiring vocational teachers. Only a few states are actually applying the cut-off scores used for certifying regular classroom teachers to the vocational area. An informal telephone followup of some states having implemented this measure indicated that failing rates among prospective vocational teachers were not alarmingly or significantly different from those of aspiring academic teachers. A certification officer from one state department of education indicated that while candidates seeking certification to teach in general education tend to score higher on language skills, those in the vocational area score higher on mathematics skills. In all states where the TOCT is used for certification purposes, the national norms established by NOCTI are used as the passing grade.

Results indicated that approximately 50 percent of the states have implemented testing in basic skills and in the occupational area for the certification of vocational teachers. However, hardly any states were testing the pedagogical and professional teaching skills of prospective vocational teachers.

Discussion

The electronic mail (ADVOCNET) was used as the main data collection medium for this study. Initial transmission of the research questions to the SDVEs generated a response rate of 37.5 percent. An optional receiver acknowledgement feature was included in the ADVOCNET message at the followup stage. Although all states acknowledged receipt of the message, only 29 percent

actually provided the information requested. Results suggested that the electronic mail network is about as effective as any of the other traditional data collection techniques used for survey research. This is probably due in part to the fact that, at present, the system calls for special skills in order to input outgoing messages and collect incoming messages. With this limitation, messages can be left unattended until a trained operator is available. In some instances, messages are picked up, but do not command immediate attention. Furthermore, the ADVOCNET lacks necessary features for personalizing a survey.

In spite of these difficulties, electronic mail offers promising potential as a medium for future survey research. However, at present, when surveys of senior executives such as the SDVEs are conducted, the telephone survey probably remains one of the most effective approaches. In this study, an average of two calls was necessary to obtain the information sought from the SDVEs. All state directors who were not available to respond initially, returned the calls within a day or two. In addition, the telephone surveys generated more in-depth and rich data than the electronic mail.

Results indicate that the wave of teacher competency testing is also gaining support for vocational teacher certification. Approximately half of the states surveyed had already implemented mandatory testing in basic skills and/or occupational competency for the certification of vocational teachers. Some states are moving with caution in the implementation of basic skills tests by first adopting a no-fault testing policy to gather a database for

establishing appropriate cut-off scores in the vocational area. Establishing differential cut-off scores is perhaps justified in light of the specific needs of vocational education. However, such measures are not likely to improve the image of vocational education. Other states are requiring their prospective vocational teachers to meet the same basic skills competency testing requirements as regular academic teachers.

Considering that 16 states are currently using the NOCTI tests for certification purposes, granting advanced standing credits, or granting recognition for years of industrial experience, it appears that NOCTI could become a major national influence on or agency for the certification of vocational teachers. Such a development could, of course, generate many benefits: (1) vocational competency testing research, test development, test administration and scoring activities could become more cost effective; (2) national norms and standards for various occupations could be developed and maintained; and (3) teacher mobility across states could be facilitated.

Another issue that deserves consideration when implementing competency testing for vocational teachers is that of achieving an appropriate balance between academic skills, pedagogical skills and professional knowledge, and occupational skills. Raising basic skills test requirements for vocational teachers could discourage competent craftsmen and technicians from high school teaching, push them out of the teaching profession altogether, or push them toward teaching in the private sector or at the public postsecondary level where certification and competency testing are

presently not major issues or concerns. Moreover, it has been well evidenced by this study and others that minority teachers are underrepresented in the teaching profession and that a disproportionate number of minority candidates are failing tests of certification. The full impact of this state of affairs is still unknown. However, a newly released report by the U.S. Department of Education's Office of Educational Research and Improvement--OERI (1987), looking at the impact of the teacher testing phenomenon upon minority group members, finds that "there has been a drop in the supply of talented, well-educated minority teachers and this is occurring at a time when there is an increasing need for black, Hispanic and Asian-American classroom instructors" (Teacher Education Reports, September 10, 1987, p. 5). Consequently, policymakers need to assess the full societal, cultural, and political impact of teacher competency testing before its full-blown implementation.

On the other hand, of course, one cannot lose sight of the fact that in today's workplace, where technology is expanding at an exponential rate, developing vocational education students' basic skills has become as important as developing their occupational skills. Therefore, the concept of integrating or infusing basic skills preparation into vocational education is gaining more acceptance. In order to achieve this objective, vocational teachers with sound basic skills preparation will be needed. Consequently, basic skills as well as occupational competency testing designed to ensure that prospective vocational teachers can meet these challenges is highly desirable.

A critical concern closely related to the competency testing issue is the growing support for the requirement that all public school teachers have a 4-year liberal arts degree with a subject-matter major before entering a teacher preparation program. "This requirement, which has been advocated strongly by two major reform groups in teacher education (the Carnegie Forum on Teaching and the Holmes Group) is favored by 72 percent of the public. Only 17 percent oppose it" (Gallup and Clark 1987, p. 27). Moreover, a recent poll of 1,513 adults and 202 top executives from 1,000 of the country's leading corporations conducted for the Carnegie Forum on Education and the Economy by Louis Harris and Associates, revealed that "nearly 80 percent of the public and 68 percent of the business executives favored the forum's recommendation that teachers obtain a 4-year college degree in the subject they plan to teach" (Education Daily, August 27, 1986, p. 2). Also, according to the survey, most of the adults and top executives "believe teachers should be required to demonstrate full command of the subject they teach and the ability to communicate that knowledge to students (Ibid.).

Two conclusions seem to be important. First, although it would seem to be highly desirable for all teachers, including public school vocational teachers, to have a 4-year liberal arts degree, this would not appear to be sufficient for vocational teachers to acquire "full command of the subject they will teach." High levels of occupational competence probably are best acquired through years of direct, on-the-job work experience, which is a traditional and continuing requirement for vocational teacher

certification. Thus, whether or not they teach occupations that require less than a baccalaureate degree, in order to relate effectively with their academic colleagues and to meet increased public expectations and standards, all vocational teachers, especially at the secondary-school level, will increasingly need to acquire 4-year baccalaureate degrees. It would seem that the traditional expectation and route into vocational teaching, including the combination of a 4-year baccalaureate degree with a balanced emphasis on teaching and a liberal education and 3 to 6 years of related trade experience, should enable vocational teachers to develop the skills and knowledge in the three major areas necessary for teaching--the basic skills, professional knowledge and pedagogical skills, and subject matter specialty skills and knowledge.

Second, acquiring a liberal arts degree with a major in the subject they plan to teach is not likely to be sufficient preparation for academic teachers to "demonstrate full command of the subject they teach and the ability to communicate that knowledge to students." Beyond the requirement for a liberal arts degree and pedagogical expertise, it seems essential that state certification requirements, as well as the major teacher reforms groups, recognize the need for all teachers, especially academic teachers, to acquire significant amounts of practical, on-the-job work experience in or related to their academic discipline. It seems that almost 70 years of experience in public vocational education and recent experiments, primarily in New Jersey, with alternative routes into teaching have shown that this is a

promising way to eventually reduce some of the abstractness and lack of relevance of much of current academic teaching and its detrimental effects on students.

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